

## **REMARKS**

### **INTRODUCTION:**

In accordance with the foregoing, claims 1 and 17 have been amended. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-25 are pending and under consideration. Reconsideration is respectfully requested.

### **REJECTION UNDER 35 U.S.C. §103:**

In the Office Action, at pages 2-3, numbered paragraph 2, claims 1-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yializis (USPN 6,706,412; hereafter, Yializis) in view of Matsuo et al. (USPN 5,645,923; hereafter, Matsuo) and Wooley et al. (USPN 5,935,662; hereafter, Wooley). The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

As indicated in amended independent claims 1 and 17, the invention of the present invention comprises a transparent vapor-deposited film comprising a substrate consisting essentially of a polymer material and a vapor deposition layer formed in contact with the substrate and consisting essentially of a ceramic material, wherein the substrate is subjected to a hollow anode plasma pretreatment before formation of the vapor deposition layer on the substrate.

Example 5 on page 27, line 24 through page 28, line 24 of the application, supports the amendment of claims 1 and 17 by showing that the vapor deposition layer is formed in contact with the substrate. The vapor deposition layer is formed directly on the substrate such that there is nothing between the substrate and the vapor deposition layer.

In accordance with the present invention, as described on page 7, line 21 through page 8, line 7 of the specification, for example, a hollow anode plasma processing apparatus is used so as to obtain a high self-bias value in the counter electrode, thus making it possible to apply a stable and powerful plasma pretreatment to the substrate surface. As a result, a surface having an activity is formed. The surface of the substrate having an activity has a high affinity with the ceramic vapor deposition layer formed on the substrate, thus improving the adhesion of the ceramic vapor deposition layer to the substrate. Therefore, when the present invention is used in accordance with embodiments, delamination which is caused by, for example, the retort treatment that utilizes vapor-deposited film, is prevented.

Claim 11 describes the vapor-deposited film comprising a substrate consisting essentially of a polymer material and a vapor deposition layer formed in contact with the

substrate and consisting essentially of a ceramic material, the ceramic material being transparent aluminum oxide, wherein the substrate is subjected to a plasma pretreatment before formation of the vapor deposition layer on the substrate, and wherein the vapor deposition layer has a gradient structure in terms of an atomic ratio of aluminum to oxygen from the side in contact with the substrate toward the surface of the aluminum oxide layer.

In addition, example 1 on page 22, line 16 through page 25 of the specification, supports the amendment of claims 1 and 17, showing that the vapor deposition layer is formed in contact with the substrate. The vapor deposition layer is formed directly on the substrate such that there is nothing between the substrate and the vapor deposition layer.

As described on page 15, line 17 through page 16, line 3 of the specification and, as recited in claim 11, a plasma pretreatment is applied to the substrate to modify the surface of the substrate, to improve the adhesion of the vapor deposition layer to the substrate, and to form, as a vapor deposition layer, an aluminum oxide layer having a gradient structure. As a result, a vapor-deposited film is obtained in which an effective adhesion is achieved between the substrate and the vapor deposition layer and delamination is unlikely to be generated by, for example, the retort, and which exhibits a sufficient transparency and a high gas barrier function.

Yializis discloses forming a radiation-polymerized acrylate monomer film on the plasma-treated surface of a polymer substrate, and vapor-depositing an inorganic layer, such as aluminum oxide and silicon oxide, thereon. However, Yializis does not disclose vapor-depositing the inorganic layer directly on the polymer film. Regarding the hollow anode plasma treatment, Yializis does not disclose a gradient structure.

Although Matsuo discloses vapor-deposition of an inorganic layer on the polymer substrate and forming a covering layer on the inorganic layer, Matsuo does not disclose applying a plasma treatment or a hollow anode plasma treatment before vapor-depositing the inorganic layer and does not disclose that the inorganic layer has the gradient structure.

Wooley discloses vapor-depositing the inorganic layer on one surface of the polymer substrate, and then applying a plasma treatment to the other surface of the polymer surface which has been moved from the deposition zone to the winding zone to reduce sticking between the polymer substrate and the drum. Wooley discloses that a hollow anode can be used as a baffle for supplying gas in the winding zone. However, Wooley does not disclose applying a plasma treatment or a hollow anode plasma treatment before vapor-depositing the inorganic layer, and does not disclose that the inorganic layer has a gradient structure.

As described above, Yializis does not disclose directly vapor-depositing the inorganic layer on the plasma-treated surface, and neither Matsuo nor Wooley discloses applying a

plasma treatment or hollow anode plasma treatment before vapor-depositing the inorganic layer. Also, Yializis, Matsuo and Wooley do not disclose the gradient structure of the inorganic layer. Therefore, the present invention cannot be taught by Yializis, Matsuo and/or Wooley, alone or in combination.

It should be noted that an argument can always be made that combining references would enhance or improve a certain feature because the claimed invention typically produces a benefit or improvement. Generally, the purpose in combining references is not to show that the combination will worsen or degrade a feature. However, the Examiner "can satisfy the burden of obviousness in light of combination 'only by showing some objective teaching [leading to the combination].'" In re Dembiczak, 50 USPQ2d 1614, 1617 (CAFC 1999), *quoting In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

Further, "evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved ... The range of sources available, however, does not diminish the requirement for actual evidence." In re Dembiczak, 50 USPQ2d 1617. The Examiner has not provided evidence that the teaching he proposes actually exists in the prior art. In fact, his reasoning appears to have merely come from Applicants' specification.

Thus, it is respectfully submitted that there is no teaching or suggestion of combining Yializis, Matsuo and/or Wooley, and that even if combined, Yializis, Matsuo and/or Wooley do not teach the present invention.

Hence, it is respectfully submitted that amended independent claims 1 and 17 are patentable under 35 U.S.C. §103(a) over Yializis (USPN 6,706,412) in view of Matsuo et al. (USPN 5,645,923) and Wooley et al. (USPN 5,935,662). Since claims 2-16 and 18-25 depend from amended claims 1 and 17, respectively, claims 2-16 and 18-25 are submitted to be patentable under 35 U.S.C. §103(a) over Yializis (USPN 6,706,412) in view of Matsuo et al. (USPN 5,645,923) and Wooley et al. (USPN 5,935,662) for at least the reasons that amended claims 1 and 17 are submitted to be patentable under 35 U.S.C. §103(a) over Yializis (USPN 6,706,412) in view of Matsuo et al. (USPN 5,645,923) and Wooley et al. (USPN 5,935,662), as well as for the features recited in those dependent claims for that vapor-deposited film composition.

## **CONCLUSION:**

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further

outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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